

Grigor'yev
NIKOLAYEV, S.V.; GRIGOR'YEV, YA.P.

Conveyer with tripper car for loading kegs in freight cars.
Masl.-shir.prom.21 no.7:33-34 '55. (MLRA 9:1)

1.Yevdakovskiy shirkombinat.
(Conveying machinery)

AFONIN, Z.M., inzh.; BEKENSKIY, B.V., inzh.; BELAN, F.N., inzh.;
GORSYANSKIY, Yu.V., kand. tekhn. nauk; CRIGOR'YEV, Yu.N.,
inzh.; KOVALEVSKIY, G.V., kand. tekhn. nauk; MAGULA, V.E.,
kand. tekhn. nauk, retsenzent; DRUZ', B.I., kand. tekhn.
nauk, retsenzent; KULAGIN, V.D., kand. tekhn. nauk,
retsenzent; DOROGOSTAYSKIY, D.V., doktor tekhn. nauk, red.

[Theory and construction of ships] Teoriia i ustroistvo
sudov. Moskva, Transport, 1965. 371 p. (MIRA 12:9)

BAGRYANSKIY, K.V., ZUBIN, V.Ye., GRIGORYEV, Ye.I., MURAYEV, I.S.

Deposition of a steel layer on gray cast iron. Avtom. svar.
18 no.5:25-28 My '65. (MIRA 18:6)

1. Zhdanovskiy metallurgicheskiy institut.

PAVLOV, M.K.; BABAK, B.D.; MININA, I.S.; LEONTYUK, S.V.;
GRIGOR'YEV, Ya.; USACHEVA, I.G., red.; SOKOLOVA, N.N.,
tekhn. red.

[Manual for the rabbit raiser] Spravochnik krolikovoda. Mo-
skva, Sel'khozizdat, 1962. 214 p. (MIRA 15:11)
(Rabbits)

GRIGOR'YEV, Ye.; DESYATERIK, V.

Sanitary patrol goes around the city. Zdorov'e 8 no.11:15
N '62. (MIRA 15:10)

1. Nachal'nik sanitarnogo patrulya pri gorodskom komitete
komsomola i gorodskoy sanitarno-epidemiologicheskoy stantsii,
Dnepropetrovsk (for Grigor'yev). 2. Redaktor gazety "Molodoy
leninets" (for Desyaterik).

(DNEPROPETROVSK--PUBLIC HEALTH)

GRIGOR'YEV, Ye.

Coordinating conferences on the problem "Labor resources of the U.S.S.R. and ways to improve their utilization in the national economy." Biul.nauch. inform.: trud i zar. plata 4 no.2:49-52 '61.
(MIRA 14:3)

(Manpower—Congresses)

BUDOVY, G.T.; MARTINKOV, I.P.; SHKOL'NIKOV, B.Ya.; GRIGOR'YEV, Ye.A.;
SOLOMIN, V.V.; REZNIK, A.I.; IGNATOVICH, A.A.; UZONOV, A.K.;
GILINSKOY, E.B.; ZHIRNOV, V.Ye.; NEMENSKIY, M.I.; VOLKOV, M.I.,
red.; VOSKANYAN, G.G., red.; KASIMOVSKIY, Ye.V., red.; FOMIN,
A.Ya., red.; LISOV, V.Ye., red.; PONOMAREVA, A.A., tekhn. red.

[The district worker's manual; reference and methodological aid
for economic and cultural planning in an administrative dis-
trict] Spravochnik raionnogo rabotnika; spravochno-metodiche-
skoe posobie po planirovaniu khoziaistvennogo i kul'turnogo
stroitel'stva v administrativnom raione. Moskva, Ekonomizdat,
1962. 439 p. (MIRA 15:7)

(Russia--Economic policy--Handbooks, manuals, etc.)

SOV/124-58-10-11469

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 10, p 110 (USSR)

AUTHOR: Grigor'yev, Ye.A.

TITLE: The Dynamic Stability of a Ring Affected by Normal Periodic Impulses (Dinamicheskaya ustoychivost' kol'tsa pod deystviyem normal'nykh periodicheskikh impul'sov)

PERIODICAL: Nauchno-tekhn. inform. byul. Leningr. politekhn. in-t, 1957, Nr 12, pp 68-74

ABSTRACT: An examination is made of the stability of a circular ring under the influence of periodic shock impulses. A fundamental differential equation for the motion and an equation for the vibrations are advanced. The boundaries of regions of instability are determined by the methods of operational calculus. It is shown that periodic solutions with periods of $2T$ and $4T$ exist no matter what the initial data, T being the identical time intervals at which impulses of identical size and opposite sense are applied. It is remarked that further periodic solutions of $4T$ period exist, when the initial data are especially selected.

Card 1/1

Yu. S. Shkenev

KULAYEV, V.M.; GRIGOR'YEV, Ye.A.; BURTSEV, B.V.

Founding the profiled part of turbocompressor rotors. List.proisv.
no.11:39-40 N '62. (MIRA 15:12)
(Impellers) (Founding)

GRIGOR'YEV, Ye.A., kand. tekhn. nauk

Temperature of the charge in the combustion chamber of a diesel engine during starting. Trakt. i sel'khoz mash. 33 no.7:9-10
Jl '63. (MIRA 16:11)

1. Volgogradskiy mekhanicheskiy institut.

ACCESSION NR: AT4040508

S/0000/63/000/000/0086/0089

AUTHOR: Grigor'yev, Ye. A.

TITLE: Method of constructing non-negative solutions for a system of linear equations

SOURCE: Konferentsiya po voprosam primeneniya matematiki v sotsialisticheskoy ekonomike. 1st, Leningrad, 1961. Matematiko-ekonomicheskiye problemy* (Problems in mathematical economics); trudy* konferentsii. Izd-vo Leningr. univ., 1963, 86-89

TOPIC TAGS: mathematical economics, economics, linear equation, linear programming, applied mathematics, linear function, matrix, vector, simplex method, cone

ABSTRACT: The author considers an ordinary problem in linear programming. Given the system:

$$\sum_{j=1}^n a_{ij}x_j = b_i, \quad (1)$$

$$x_j > 0, \quad (j = 1, 2, \dots, n).$$

It is required to determine the extreme value of the linear form

$$L = \sum_{j=1}^n l_j x_j$$

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ACCESSION NR: AT4040508

for x_k satisfying the system (1). Such a problem has been solved by various methods, in particular the simplex method of Dantzig, but the method suggested in the present paper is new. First of all the author considers the question of the existence of nontrivial, non-negative solutions of the homogeneous, linear system:

$$\sum_{k=1}^n a_{ik} x_k = 0, (i = 1, 2, \dots, m). \quad (2)$$

If the system (2) has a non-negative solution, it is represented in the form

$$\begin{pmatrix} x_1 \\ x_2 \\ \vdots \\ x_n \end{pmatrix} = B \begin{pmatrix} c_1 \\ c_2 \\ \vdots \\ c_M \end{pmatrix}. \quad (3)$$

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ACCESSION NR: AT4040508

where B is some non-negative matrix, and c_i are arbitrary non-negative numbers. If the system (2) contains only one equation

$$a_1x_1 + a_2x_2 + \dots + a_nx_n = 0. \quad (4)$$

then the question of the existence of a non-negative solution is trivial. Clearly, if all the coordinates of the vector $a = (a_1, a_2, \dots, a_n)$ are strictly positive, then no non-negative solution exists. Let us assume that the numbers a_1, a_2, \dots, a_n are not all positive. Then there exists some set of non-negative vectors $x = (x_1, x_2, \dots, x_n)$, which are the solution of equation (4), and the points (x_1, x_2, \dots, x_n) describe some convex, polyhedral cone K in the space R_n . The first problem consists of building a framework for this cone. After discussing the construction of the cone, the paper continues with a consideration of the linear programming problem. The author proposes a new method for obtaining the results of the linear system. Orig. art. has: 21 formulas.

ASSOCIATION: None

SUBMITTED: 00

DATE ACQ: 12Jun64

ENCL: 00

SUB CODE: MA

NO REF SOV: 000

OTHER: 000

Card 3/3

MOMES, I.M.; GRIGOR'YEV, Ye.A., inzhener, redaktor; KONTSEVAYA, E.M., redaktor;
RA'OV, S.I., redaktor.

[Laying pipe lines without trenches and underwater] Bestransheinaia
i podvodnaia prokladka truboprovodov. Moskva, Trudreservisdat, 1953.
62 p. (MLRA 7:6)
(Pipe lines)

GRIGOR'YEV, Ye.A.

BORODIN, Ivan Vasil'yevich, kandidat tekhnicheskikh nauk, dotsent; GRI-
GOR'YEV, Ye.A., inzhener, retsensent; DANILOV, P.M., inzhener,
retsensent; VANIN, V.I., inzhener, retsensent; YAKOVLEV, G.I.,
dotsent, redaktor; SMOL'YAKOVA, M.V., tekhnicheskij redaktor

[Organization and planning of water-supply and sewerage construc-
tion and assembling work] Organizatsiia i planirovanie stroitel'no-
montazhnykh rabot po vodosnabzheniiu i kanalizatsii. Moskva, Gos.
izd-vo lit-ry po stroit. i arkhitekt., 1955. 305 p. (MIRA 8:7)
(Water supply engineering) (Sewerage)

GRIGOR'YEV, Ye.A., inshener

"Trench excavation." M.K.Nekliudov. Reviewed by E.A.Grigor'ev.
Mekh.stroi.12 no.8:31 Ag'55. (MLRA 8:10)
(Excavating machinery) (Nekliudov, M.K.)

~~ORIGOR'YEV, Yevgeniy Adamovich, inzh.;~~ ZHUKOV, Filipp Fedorovich, inzh.;
~~PORFIR'YEV, M.M.,~~ kand.tekhn.nauk, red.; SHMEYEROV, S.A., red.izd-va;
KONYASHINA, A.D., tekhn.red.

[Construction of water supply and sewerage systems; the practice of
construction organisations in Moscow] Stroitel'stvo vneshnikh setei
vodoprovoda i kanalisatsii; opyt stroitel'nykh organizatsii g.Moskvy.
Moskva, Izd-vo M-va kommun. khoz. RSFSR, 1957. 375 p. (MIRA 11:4)
(Water supply engineering) - (Sewerage)

ZHUKOV, P.F., inzh.; GRIGOR'YEV, Ye.A., inzh.

New developments in the shield method. Gor. khoz. Mosk. 35
no.11:23-25 N '61. (MIRA 16:7)
(Underground construction)

GRIGOR'YEV, Ye.A.; MURAVIN, A.V.; TANKILEVICH, A.G.; SHOR, D.I., kand.
tekhn.nauk, starshiy nauchnyy sotrudnik

Urgent problems of underground construction in the city. Gor.
khoz.Mosk. 36 no.6:23-25 Je '62. (MIRA 15:8)

1. Glavnyy inzhener Tresta gornoprokhodcheskikh rabot (for
Grigor'yev). 2. Zamestitel' nachal'nika Upravleniya dorozhno-
mostovogo stroitel'stva Glavnogo Upravleniya po zhilishchnomu i
grazhdanskomu stroitel'stvu v g. Moskve (for Muravin). 3. Glavnyy
spetsialist tresta "Mosorgstroy" po stroitel'stvu podzemnykh
sooruzheniy (for Tankilevich). 4. Tsentral'nyy nauchno-issledovatel'-
skiy i proyektno-konstruktorskiy institut podzemnogo shakhtnogo
stroitel'stva (for Shor).

(Moscow--Underground construction)

GRIGOR'YEV, Ye.A., inzh.; MURAVIN, A.V., inzh.; ETKIN, S.M., inzh.

Perfecting and lowering the cost of the construction of sewers.
Gor.khoz.Mosk. 37 no.10:5-7 0 '63. (MIRA 17:2)

1. Trest gornopromyshlenskikh rabot Upravleniya dorozhno-mostovogo
stroitel'stva Glavnogo upravleniya po zhilishchnomu i grazhdanskomu
stroitel'stvu v g. Moskve.

GRIGOR'YEV, Ye.G., inzh.

Small grain concrete made with cinders. Biul.tekh.inform 3
no.4:6-10 Ap '57. (MIRA 10:10)
(Concrete)

GRIGOR'YEV, Ye. O., inzh.

Behavior of reinforcements in fine grained cinder concretes.

Biul. tekhn. inform. 4 no. 6:21-24 Js '58.

(MIRA 11:7)

(Reinforced concrete--Testing)

(Corrosion and anticorrosives)

GRIGOR'YEV, Ye. G. Cand Tech Sci — (diss) "Investigation of Certain Problems in the Technology of Preparing Sectional Structural Units Made of Cinder-based Concrete," Leningrad, 1960, 20 pp, 150 copies (Leningrad Institute of Engineers of Railroad Transport im Acad. V. N. Obraztsov) (KL, 47/60, 102)

IVANOV, V.I.; SATIN, M.S.; GRIGOR'YEV, Ye.O.

Production of aerated concrete products at the Avtovo
Housing Construction Combine. Bet.i shel.-bet. no.6:
248-250 Je '60. (MIRA 13:7)

1. Nachal'nik Avtovskogo domostroitel'nogo kombinata
Glavlenigradstroya (for Ivanov). 2. Mukovoditel' laboratorii
stroitel'nykh materialov Leningradskogo filiala Akademii
stroitel'stva i arkhitektury SSSR (for Satin). 3. Nachal'nik
laboratorii Avtovskogo domostroitel'nogo kombinata Glavlenigrad-
stroya (for Grigor'yev).
(Leningrad—Lightweight concrete)

G.IGOR'YEV, Ye.G.; SATIN, M.S.; DERYADIN, I.M.; IVANOV, A.K., inzh.,
nauchnyy red.; DNEPROVA, N.N., red. izd-va; PUL'KINA, Ye.A.,
tekhn. red.

[Residential buildings made of air-entrained concrete] Zhi-
lye doma iz gazobetona; opyt Leningrada. Leningrad, Gos-
stroizdat, 1962. 130 p. (MIRA 15:10)
(Leningrad--Apartment houses)
(Lightweight concrete)

L 28822-66 EEC(k)=2/EWA(h)/FNT(1)
ACC NR: AP6007161

SOURCE CODE: UR/0115/65/000/012/0013/0016

AUTHOR: Antonov, V. V.; Polinskiy, Yu. D.; Tsingauz, V. Kh; Grigor'ev, Ye. G.;
Belkova, M. M. 42
B

ORG: none

TITLE: Some methods for eliminating the error due to sweep nonlinearity in photo-
pulse devices 25

SOURCE: Izmeritel'naya tekhnika, no. 12, 1965, 13-16

TOPIC TAGS: photoelectric cell, industrial automation, error minimization

ABSTRACT: A photoelectric system of automatic control of rolling-mill-product dimensions is considered; specifically, the error due to nonlinearity of the mechanical sweep of the Π -shaped pulse is analyzed, and these two methods for the error elimination are suggested: (1) Generation of a nonuniform sequence of filling scale pulses by an LC-oscillator; (2) Same, by an RC-oscillator. In the first method, the scale-pulse frequency is calculated by a variable capacitor whose plates are shaped to compensate for the nonlinearity of the sweep. In the second case, the same results are achieved by calculating a luminous flux falling on a photoresistor or by calculating the intensity of a light source. Only the theory of the methods is presented. Orig. art. has: 5 figures and 22 formulas.

SUB CODE: 09M/ SUBM DATE: none / ORIG REF: 001

Card 1/1 CC

UDC: 621.373.431.2.088:531.71

AM4008937

BOOK EXPLOITATION

S/

Grigor'yev, Yuriy Grigor'yevich

Radiation injuries and compensation of disturbed functions; study materials of initial reactions of an organism under the influence of ionizing radiation in small and large doses (Luchevy*ye porazheniya i kompensatsiya narushenny*kh funktsiy; materialy* izucheniya pervonachal'ny*kh reaktsiy organizma pri vozdeystvii ioniziruyushchego izlucheniya v maly*kh i bol'shikh dozakh) Moscow, Gosatomizdat, 1963. 201 p. illus., biblio. 4150 copies printed.

TOPIC TAGS: radiation, radiation effect, biological effect, radiation dose, compensatory reaction, physiological compensation, acute radiation sickness, radiation sickness, functional compensation, radiobiology

PURPOSE AND COVERAGE: This book is intended for radiobiologists, medical scientists, and others interested in research and development of new techniques for the prevention and treatment of radiation injuries. The materials it contains may also contribute to the solution of problems of exposure to radiation in space flight.

Card 1/5

AM4008937

The book presents the results of extensive clinical and experimental research on systemic reactions of the organism during exposure to radiation. The investigations include: the biological effect of small radiation doses as manifested in the initial reactions of the nervous system, functional reactions of the organism during irradiation with lethal doses (LD_{50} to LD_{100}), and special aspects of death in animals due to radiation. New methodological procedures used in the investigations are described. Problems of the compensation by the organism of functions disrupted by radiation injury are examined and the various compensatory reactions classified. Further experiments designed to explore the capacities of the organism for compensating radiation injuries are reported. The author thanks Professor A. V. Lebedinskiy, member of the Academy of Medical Sciences USSR, and Professors N. N. Livanov and M. P. Domshlak, Corresponding Members of the Academy of Medical Sciences USSR, for their valuable advice.

TABLE OF CONTENTS:

Foreword -- 3

Card 2/5

1. ...

2. ... (HRS 13:7)

(Source: ...)

KORSHNIKOV, G.V., inzh.; VERONOV, Yu.G., inzh.; TSEYTOV, M.A., inzh.;
KIYASHKO, Yu.M., inzh.; GOROKH V, A.S., inzh.; SERAFIM, M.A.,
inzh; Prinsipali uchastiye: ARSHINOV, G.P.; GRIGOR'YEV, Ye.I.;
KUVARIN, Yu.N.; RUDAKOV, N.V.; BUYEV, V.Ye.; IGLEPITSYN,
A.N.

Investigating the oxidizing zone of a blast furnace working
under oxygen-enriched blowing (35% oxygen) and using natural
gas. Stal' 25 no.8:781-790 S '65. (MIRA 18:9)

GRIGOR'YEV, Ye. L.
USSR/Nuclear Physics - Polarized beams

FD-2305

Card 1/2 Pub. 146 - 30/34

Author : Grigor'yev, Ye. L.

Title : ~~Observation of polarization of beams of fast particles by means of nuclear photoemulsions~~
Observation of polarization of beams of fast particles by means of nuclear photoemulsions

Periodical : Zhur. eksp. i teor. fiz. 28, 761, Jun 1955

Abstract : The results of experiments on scattering of high-energy particles points to the existence of noncentral forces in the interaction between nucleons, the presence of such forces leading particularly to the occurrence of polarization of beams of scattered particles, the magnitude of which is determined experimentally by measurement of the asymmetry during double scattering. The author attempted to observe the polarization of beams of protons and neutrons by means of a photographic method, instead of the usual scintillational counter method (L. Wouters, C. Oxley, A. Roberts, H. Carvalho, etc. all in Phys. Rev., 1951-1954); namely, the author observed the quasielastic scattering of protons on nucleons of the nuclei of the elements composing the emulsion. He obtained the magnitude of asymmetry to be 0.06 ± 0.03 , and concludes that beams of protons and neutrons arising in the interaction of 670-Mev

Card 2/2

FD-2365

particles with beryllium nuclei are partially polarized. Five
ref: e.g. G. D. Stoletov, S. B. Nurushev, and Yu. P. Kumekin,
Otchet In-ta yader. prob. AN SSSR (Report of Institute of Nuclear
Problems), 1954.

Institution : Institute of Nuclear Problems, Acad. Sci. USSR

Submitted : Feb 7, 1955

GRIGOR'YEV, Ye. L.

USSR/ Physics - Non-elastic collisions

Card 1/1 Pub. 22 - 12/45

Authors : Mitin, N. A. and Grigor'ev, Ye. L.

Title : Non-elastic dispersion of negative π -mesons of 300 Mev energy by complex nuclei

Periodical : Dok. AN SSSR 103/2, 219-222, Jul 11, 1955

Abstract : Experimental measurements of the angular dispersion and energy distribution in the nonelastic collisions of π -mesons of 300 Mev energy with nucleons are described. These measurements were conducted with the help of photo-emulsions 400 μ thick, where the π -mesons formed by the bombarding of a graphite target with 670 Mev protons collided with nucleons of the emulsion. Four references: 1 USSR and 3 USA (1954-1955). Graphs.

Institution : The Acad. of Sc., USSR, Institute of Nuclear Problems

Presented by : Academician L. A. Artsimovich, May 5, 1955

GRIGOR'EV, E.L.

CARD 1 / 2

PA - 1337

SUBJECT USSR / PHYSICS
 AUTHOR GRIGOR'EV, E.L., MITIN, N.A.
 TITLE The Elastic Scattering of Positive Pions with an Energy of
 310 MeV by Protons.
 PERIODICAL Zurn.eksp.i teor.fis, 31, fasc. 1, 37-39 (1956)
 Issued: 9 / 1956 reviewed: 10 / 1956

The differential cross section of the elastic scattering of positive 310 MeV pions by hydrogen was measured by means of nuclear photoemulsions. The electron-sensitive photo plates with an emulsion thickness of 400 μ were irradiated with a bundle of positive pions at the output of a magnetic spectrometer. The mesons were produced by bombarding a paraffin target by a bundle of 660 MeV protons of a synchrocyclotron. The scattering processes were selected by means of a microscope with an immersion objective. The acts of elastic scattering were identified by the following criteria: 1.) Angular correlation between the scattered meson and the recoil proton. 2.) Complanarity. The complanarity condition is explicitly given. 427 scattering processes were found in the sector of dial 10-170° (in the center of mass system). The differential scattering cross section found on the basis of these results has, according to the diagram attached, a minimum at 105°. The total scattering cross section of the positive 310 MeV pions was assumed to be $7 \cdot 10^{-27} \text{ cm}^2$. (The summation interval was 20°). The differential cross section can be expressed by the first three terms of a LEGENDRE series: $d\sigma/d\Omega = [(2.4 \pm 0.2) + (4.9 \pm 0.4) \cos \vartheta + (9.3 \pm 0.7) \cos^2 \vartheta] \cdot 10^{-27} \text{ cm}^2/\text{sterad}$.

Zurn.eksp.i teor.fiz, 31, fasc.1, 37-39 (1956) CARD 2 / 2

PA - 1337

The scattering of the positive 310 MeV pions is explained in first approximation by the fact that only S- and P-states participate. The insufficient accuracy of the results obtained does not make it possible to draw conclusions as to the extent of the contribution made by the D-state towards scattering; probably, however, it plays only an insignificant part. The phase shifts in S-, $P_{3/2}^-$

and $P_{1/2}$ states with the isotopic spin $T = 3/2$ are $\alpha_3 = -23^\circ$, $\alpha_{33} = 132^\circ$ and $\alpha_{31} = -9^\circ$.

According to experimental data the phase α_{33} passes through 90° within the range of meson energies of about 200 MeV. This fact may be considered

to indicate the existence of a resonance interaction of pions with nucleons in the state with total and isotopic spin $3/2$. The value $\alpha_{33} = 132^\circ$ at a meson

energy of 310 MeV is not in contradiction to the existence of such a resonance interaction. It is interesting to compare these results with computations basing on the assumption of an excited nucleon state. Such computations were carried out by basing on the assumption that only S- and P-states participate in scattering. The justification for the neglect of the contributions made by higher states was confirmed by the measuring results obtained. According to the attached diagram the curve computed in this manner gives a good description of the general character of the angular distribution of the elastically scattered pions.

INSTITUTION:

~~GRIGOR'EV, E.L.~~ GRIGOR'EV, E.L.

CARD 1 / 2

PA - 1878

SUBJECT USSR / PHYSICS
AUTHOR GRIGOR'EV, E.L., SOLOV'EVA, L.P.
TITLE The Nuclear Spallations produced by 660 MeV-Protons in a Photo-emulsion.
PERIODICAL Zhurn.eksp.i teor.fiz, 31, fasc.6, 932-938 (1956)
Issued: 1 / 1957

The experimental investigations described here were based on the following main problems: the general properties of the spallations, the interaction cross sections, the energy- and angular distribution of the charged particles produced on the occasion of spallations. The distribution of "stars" over the number of beams was measured with electron-sensitive plates and results are shown in form of a table. The average number of beams in a star depends only little on the energy of the arriving particle. The number of stars with many beams increases somewhat with increasing energy. An average of $0,98 \pm 0,20$ "grey" traces corresponds to one spallation. The cross section of nonelastic interaction processes: The cases of interaction between protons and nuclei are counted by following the traces of the original protons. Results are shown in a table. The experimentally found ratios between interaction cross sections and geometric cross sections is, in the case of light and heavy nuclei, $0,46 \pm 0,18$ and $0,87 \pm 0,12$ respectively. These data agree in the case of heavy nuclei with the theory of the semitransparent nucleus, but in the case of light nuclei it holds that $\sigma_{\text{teor}} \sim 2 \sigma_{\text{exp}}$. This indicates the probability of a considerably greater transparency of light nuclei than might have been

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PA - 1878

expected in accordance with theory. The slowly charged particles (protons with less than 50 MeV and α -particles) were studied by determining angular- and energy distribution. For this purpose the traces of the particles with simple and double charge were measured in plates with rather low sensitivity. All simply charged particles were looked upon as protons, and all double charge particles as α -particles. The charged particles are not emitted isotropically. However, in the case of angles of $\sim 100^\circ$ the distributions of α -particles and protons become isotropic. About 30% of the protons and about 20% of the α -particles are emitted in a cascade process, but these estimates are obviously too low. Next, the energy distributions of α -particles and protons are discussed. Excitation energy: According to theoretical computations 5,5 charged particles correspond to an excitation energy of 230 MeV. These measurements result in 5,4 particles. The experimental material obtained here agrees with the general and rough conceptions of the interaction between fast particles and complicated nuclei. The emission of mesons: The simply charged particles emitted on the occasion of spallations contain also pions. The intensity of their production increases considerably with the energy of the incident particle.

INSTITUTION: Institute for Nuclear Problems of the Academy of Science in the USSR.

GRIGOR'YEV, E.L., MUKHIN, A.I., OZEROV, E.B., PONTEKORVO, B.M., MITIN, N.A.

"Positive Pion-Proton Scattering at Energies 176, 200, 240, 270, 307 and 310 MeV," paper presented at CERN Symposium, 1956, appearing in Nuclear Instruments, No. 1, pp. 21-30, 1957

GRIGOR'YEV, Ye. L.

5/1/80

4734

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ELASTIC SCATTERING OF 310-Mev π^+ MESONS FROM
PROTONS. E. I. Grigor'ev and N. A. Mitin. Soviet Phys.
JETP 4, 10-12(1957) Feb.

The angular distribution of 310-Mev π^+ mesons elastically scattered by protons in photoemulsions has been measured. The differential scattering cross section based on 427 observed counts has been obtained in the center-of-mass system. The phase analysis, taking into account only the S and P states, and assuming the Fermi solution, gave the following values for the phase shifts: $\alpha_1 = -23^\circ$, $\alpha_3 = 132^\circ$, $\alpha_{11} = -9^\circ$. The D state, apparently, contributes little to scattering in comparison with the S and P states. (auth)

GRIGOR'YEV, Ye. L.
MITIN, N.A.; GRIGOR'YEV, Ye. L.

Elastic scattering of 360 Mev positive π -mesons by protons. Zhur.
eksp. i teor. fiz. 32 no.3:440-444 Mr '57. (MLRA 10:11)

1. Ob'yedinennyy institut yadernykh issledovaniy.
(Mesons--Scattering)

AUTHOR:

Grigor'yev, Ye. L.
Sidorov, V.M., Grigor'yev, Ye.L.

56-5-18/46

TITLE:

Observation of Particles With Charges $Z > 2$ in Evaporation Processes Produced When Highly Energetic Neutrons Impinge Upon Photographic Emulsion Nuclei (Nablyudeniye chastits s zaryadom $Z > 2$ v rasshchepleniyakh, obrazovannykh v fotoemul'sii neytronami vysokoy energii)

PERIODICAL:

Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol. 33, Nr 5, pp. 1179-1184 (USSR)

ABSTRACT:

Photoplates with a highly sensitive emulsion of 200 μ thickness were exposed in a collimated neutron current. The neutrons were produced by the impinging of 480 MeV protons on a beryllium target. The neutron energy spectrum has its maximum at ~ 395 MeV. After working on about 10 037 of the registered stars the following may be said:

- a) The average number of "rays" in the stars amounts to 3.8.
- b) Within the rays in the stars 19 hammer-like traces, 16 pairs of α -particles with a very small angular aperture, 2 cases of flying apart of 3 α -particles in a narrow cone, 4 traces of Be^8 , 1 case of B^9 emission, and 23 traces of particles with $Z > 2$ were observed.

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56-5-18/46

Observation of Particles With Charges $Z > 2$ in Evaporation Processes
Produced When Highly Energetic Neutrons Impinge Upon Photographic Emulsion
Nuclei

- c) The cross section for the emission of particles with $Z > 2$ was determined at (2.8 ± 1.4) mb.
 - d) The cross section for the emission of Li^8 and Be^8 was determined at (0.8 ± 0.4) mb and (1.3 ± 0.6) mb respectively.
- There are 4 figures, 1 table, and 16 references, one of which is Slavic.

ASSOCIATION: United Nuclear Research Institute (Ob'yedinennyy institut yadernykh issledovaniy)

SUBMITTED: June 8, 1957

Card 2/2

SOV/56-37-2-13/56

21(7)
AUTHORS:

Grigor'yev, Ye. L., Mitin, N. A.

TITLE:

The Polarization of the Recoil Nuclei in Elastic π^+ -p Scattering at an Energy of 307 Mev

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959,
Vol 37, Nr 2(8), pp 413-421 (USSR)

ABSTRACT:

The present very detailed paper deals with polarization measurements on recoil nuclei and with problems of the SPD-phase analysis. The experimental arrangement is shown schematically by figure 2, the method, according to which the π^+ -beam was obtained, has already been described several times. The pion beam ($E_{\pi^+} = 307 \pm 5$ Mev) impinged after emerging from the collimator (diameter 5 cm) upon the target of liquid hydrogen, which was located in a special metal vessel. The neutron-sensitive photo-emulsions of the type NIKFI-R (layer thickness 400 μ) were arranged at an angle of 20° with respect to the pion beam. Selection of the protons to be investigated was carried out from the following points of view: deviation of the proton tracks from the main direction (20°) should not be greater than $\pm 4\%$, which

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The Polarization of the Recoil Nuclei in Elastic π^+ -p Scattering at an Energy of 307 Mev

corresponds to scattering through an angle of $140 \pm 8^\circ$ in the c.m.s. The angle of inclination of the tracks with respect to the emulsion plane ought not to exceed 12° . Grain density in the tracks followed should correspond to that in 160 Mev proton tracks. Measuring results are given by tables. In the plates to the right and to the left of the pion beam axis 545 cases of an elastic scattering of recoil protons on emulsion nuclei were found within the interval $\theta_p = 3.5 - 27^\circ$ (azimuthal angle $0^\circ \leq \varphi \leq 60^\circ$). The measuring results for the right and the left photoplates are given separately in table 1, and for the four angular intervals, in which measurements were carried out, the degree of asymmetry was calculated. Calculation of polarization was carried out on the basis of the "optimum" phase shift set (SPD analysis) (Table 2). The phase shifts satisfying the indicated polarization value and consistent with the differential cross section for the elastic scattering of π^+ -mesons by protons are given: $\alpha_3 = -23.2^\circ$, $\alpha_{33} = 1.33 \cdot 2^\circ$, $\alpha_{31} = -8.4^\circ$; $\delta_{33} = (2_{-2}^{+3})^\circ$, $\delta_{35} = (-2_{-3}^{+2})^\circ$. Table 3 contains the P_1 -values cor-

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The Polarization of the Recoil Nuclei in Elastic π^+ -p Scattering at an Energy of 307 Mev

responding to phase shift sets with different selection of the sign of δ_{33} and δ_{35} , table 4 - the same for a phase shift set according to Yang. The problems arising in connection with the use of different phase shift sets for analysis of the experimental data are discussed. The authors finally thank L. I. Lapidus for advice and discussions, A. I. Mukhin for his help in carrying out experiments, S. B. Nurusev for discussing the results obtained, L. Mal'tseva, T. Kybakova and R. Khristova for evaluating the emulsions, and Professors V. P. Dzhelepov and B. M. Pontekorvo for the interest they displayed. There are 3 figures, 4 tables, and 11 references, 3 of which are Soviet.

ASSOCIATION: Ob'yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: April 1, 1959

Card 3/3

AUTHOR MITIN, N.A., GREGOR^YEV, E.L., PA - 2954
 TITLE The Elastic Scattering of Positive 360 MeV Pions by Protons.
 (Uprugoya rasseyaniye protonami polozhitel'nykh π -mезonov s energiyey
 360 MeV - Russian)
 PERIODICAL Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol 32, Nr 3,
 pp 440-444, (U.S.S.R.)
 Received 6/1957

Reviewed 7/1957

ABSTRACT The present paper measures the angular distribution of positive pions with the energy 360 ± 10 MeV, which were scatted on the hydrogen nuclei contained in the photoemulsion, by means of the method of nuclear photo emulsions. These measurements were carried out with the synchrocyclotron of the United Institute of Nuclear Research. The electron- sensitive photo plates with a layer of a thickness of 400 were irradiated at the outlet of a magnetic spectrometer in a bundle of positive pions. The pions were produced in a carbon target of 5 cm thickness on the occasion of the bombarding by the bundle of 657 MeV protons emerging from the chamber of the synchrocyclotron. The authors found 218 cases of a scattering within the interval of the angles of from 10° to 170° in the center of mass system. The interval of summation amounted to 20° . The distribution of the number of acts of scattering over the angle intervals is shown in form of a table. The total cross section σ_t of the elastic scattering was selected equal to $43,4 \cdot 10^{-27}$ cm². The experimental data obtained are shown in a diagram. If the experimental results are represented as a development

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PA - 2954

The Elastic Scattering of Positive 360 KeV Pions by Protons.

in series according to the LEGENDRE polynomials $d\sigma/d\Omega = \sum A_n P_n(\cos \chi)$. the following expression is obtained for the differential cross section, $d\sigma/d\Omega = 3,43P_0 + 4,63 P_1 + 4,20 P_2 + 0,57 P_3 - 0,61 P_4 \cdot 10^{-27} \text{ cm}^2/\text{sterad}$. By an explicit development of this expression the differential cross section can be written down in form of a series according to the powers of $\cos \chi$. This series is here written down in third and fourth approximation. By means of a graphical method the following phase shifts were computed, $\delta_{33} = 146^\circ$, $\delta_{31} = -14^\circ$, $\delta_3 = -31^\circ$. By the SPD analysis by means of a mechanical phase analyzer the following phase shifts were obtained, $\delta_{33} = 143^\circ$, $\delta_{31} = -5^\circ$, $\delta_3 = -14^\circ$, $\delta_{35} = 10^\circ$, $\delta_{37} = -13^\circ$. The differential scattering cross section corresponding to these and other values of the phases is shown in form of a diagram and agrees well with experimental data. (2 ill., and 1 table).

ASSOCIATION United Institute for Nuclear Research.
PRESENTED BY
SUBMITTED 19.10.1956.
AVAILABLE Library of Congress.
Card 2/2

GRIGOR'YEV, Ye. L. Cand Phys-Math Sci -- (diss) "Elastic diffusion of positive
Pi-mesons by protons in the ~~area~~^(range) of 307-390-MEV energy." Dubna, 1959. 14 pp
with graphs (Joint Inst of Nuclear Studies. Laboratory of Nuclear Problems),
170 copies. Printed by duplicating machine. (KL, 48-59, 112)

24.6200, 24.6510,
24.6520, 16.8100

76972
SOV/56-37-6-12/55

AUTHORS: Grigor'ev, E. L., Mitin, N. A.

TITLE: Elastic Scattering of the 390 mev π^+ -Mesons by Protons

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 37, Nr 6, pp 1583-1586 (USSR)

ABSTRACT: Measurements were made of the angular distribution of the (390 ± 25) mev π^+ -mesons elastically scattered on hydrogen. The thickness of nuclear photoemulsion (type NIKFI-R) was 400μ . The detailed experimental conditions were given by the authors in their previous work (cf. Zhur. eksp. i teoret. fiz., 31, 37, 1956; 32, 440, 1957). The plot of the differential scattering cross section was described by the relation:

$$d\sigma/d\Omega = [(1.12 \pm 0.22) + (4.27 \pm 0.84) \cos \theta + (4.68 \pm 1.08) \cos^2 \theta] \times 10^{-27} \text{ cm}^2/\text{cm}^2 \text{ pad.} \quad (1)$$

The following phase shifts of the Fermi solution were obtained by assuming that only S- and P-states participate in the scattering: $\alpha_3 = -34^\circ$, $\alpha_{33} = 151^\circ$,

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Elastic Scattering of the 390 mev
 π^+ -Mesons by Protons

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and $\alpha_{31} = -16^\circ$. L. B. Parfenov participated in this work. The text contains 1 table; 1 graph; and 5 references, 4 Soviet, 1 U.S. The U.S. reference is: J. Orear. Phys. Rev., 96, 176, 1954.

ASSOCIATION: Joint Inst. Nuclear Research, USSR (Ob'edinennyy institut yadernykh issledovaniy, SSSR)

SUBMITTED: July 9, 1959

Card 2/2

BOGACHEV, N. P., GRIGORYEV, Ye. L., ISKENDY, Yu. P.

"Inelastic Proton-Nucleon Interaction at 9 BeV"

report presented at the Intl. Conference on High Energy Physics, Geneva,
4-11 July 1962

Joint Inst. for Nuclear Research
Lab. of Nuclear Problems

S/056/63/044/002/018/065
B102/B186

AUTHORS: Bogachev, N. P., Grigor'yev, Ye. L., Merekov, Yu. P.,
Mitin, N. A.

TITLE: Emission of Li^8 fragments in Ag and Br nuclear disintegrations induced by 9-Bev proton bombardment

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 44,
no. 2, 1963, 493-497

TEXT: Nuclear emulsions of the type ННҚФН-Р (NIKFI-R) were exposed to proton bombardment in a synchrotron. Among the total of 19,724 stars with $N_b > 8$ found on microscopic scanning, 344 contained one and 7 two Li^8 tracks; N_b is the number of black prongs. After a correction for the Li^8 fragments not stopped inside the layer, the total number of stars containing Li^8 tracks amounts to 428. The Li^8 yield was found to increase with N_b (from 8 to 30) from 0.012 ± 0.002 to 0.072 ± 0.021 . The energy distribution of the Li^8 fragments is compared with the curves calculated on the basis of the evaporation model for (1) $T = 10 \text{ Mev}$, $V = 5 \text{ Mev}$,
Card 1/2

Emission of Li^8 fragments ...

S/056/63/044/002/018/065
B102/B106

$v = 0.015$ c, and (2) $T = 10$ Mev, $V = 5$ Mev, $v = 0$; T is the temperature, V the Coulomb barrier and v the velocity of the nucleus hit by the proton. Curve (1) agrees closely with the distribution measured; the latter has, however, a tail at high energies. The angular distributions plotted for $E \geq 21$ Mev and $E < 21$ Mev show a considerable difference: the low-energy group of Li^8 fragments in the lab system is almost isotropic (forward-backward ratio = 1.37 ± 0.30) that of the fast group is anisotropic (2.10 ± 0.15). The energy distribution as well as the angular distribution (characterized by the forward-backward ratio) are both virtually independent of N_p . Except for the large width of the energy spectrum all characteristics agree with the theory of Li^8 evaporation from a highly excited nucleus. There are 5 figures and 1 table.

ASSOCIATION: Ob'yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: September 24, 1962

Card 2/2

L 13645-63 EWT(m)/BDS AFFTC/ASD

ACCESSION NR: AP3003113

S/0056/63/044/006/1869/1872 57
56

AUTHOR: Bogachev, N. P.; Volod'ko, A. G.; Grigor'yev, Ye. L.; Merekov, Yu. P.

TITLE: Emission of $\text{Li}^{sup 8}$ fragments in the disintegration of Ag and Br nuclei by 19 BeV protons

SOURCE: Zhurnal eksper. i teor. fiziki, v. 44, no. 6, 1963, 1859-1872

TOPIC TAGS: emission of lithium fragments, disintegration of Ag nuclei, disintegration of Br nuclei, evaporation model

ABSTRACT: The main characteristics of the emission of $\text{Li}^{sup 8}$ in disintegrations with more than 8 black prongs, such as the yield per disintegration, the energy and angular distributions, and some information concerning the emission of two fragments in one disintegration, are presented as results of a study which continues similar earlier work (ZhETF v. 44, 493, 1963) at lower proton energy. The compatibility with the evaporation scheme, which was found in the earlier experiments, is found to apply in the present range of energies, too. "The authors thank Prof. V. P. Dzhelepov for continuous interest and attention to the work, and also Prof. I. I. Gurevich and B. A. nikol'skiy, who graciously furnished emulsions irradiated in the CERN proton

Card 1/2 Joint Inst. of Nuclear Research

S/020/63/148/004/010/025
B141/B102

AUTHORS: Bogachev, N. P., Grigor'yev, Ye. L., Merekov, Yu. P.
TITLE: Inelastic proton-nucleon interaction at an energy of 9 Bev
PERIODICAL: Akademiya nauk SSSR. Doklady, v. 148, no. 4, 1963, 793-795

TEXT: In an emulsion chamber irradiated with 9-Bev protons 760 events of inelastic (pN) interactions (492(p-p) and 268(p-n)) were recorded and analyzed. The mean multiplicity for (p-p) reactions was 3.34 ± 0.06 , for (p-n) reactions 2.76 ± 0.09 . The secondary particles were identified in multiple-scattering and ionization-density measurements. The c.m.s. angular distribution of the charged pions was slightly anisotropic and this was traced to the fast π^\pm component. In both reactions the angular distributions of the secondary protons were strongly anisotropic. The anisotropy decreased with the proton momentum. The results are analyzed from the standpoint of the charge-symmetry hypothesis. The momentum spectra of the charged pions are much softer than those of the secondary protons. The momentum spectra of the pions as well as of the protons

Card 1/2

Inelastic proton-nucleon interaction ...

5/020/63/143/004/010/025
B141/B102

become softer as the number of secondary particles increases. If the multiplicity increases, the anisotropy of the angular distribution should be reduced, but no such reduction could be observed. The experimental data obtained on secondary protons are not consistent with the statistical theory of multiple production. The model of peripheral collision gives a good description of the experiment. If Δ 2 particles are produced the model of single meson exchange is sufficient to explain the interactions. At higher multiplicities it is, however, not sufficient. There are 4 figures and 1 table. ✓

ASSOCIATION: Ob'yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

PRESENTED: September 26, 1962, by N. N. Bogolyubov, Academician

SUBMITTED: September 22, 1962

Card 2/2

S/020/63/148/005/009/029
B112/B186

AUTHORS: Bogachev, N. P., Grigor'yev, Ye. L., Merekov, Yu. P.

TITLE: Cross-section for the formation of Li^8 in a nuclear emulsion
by 9-Bev protons

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 148, no. 5, 1963, 1046

TEXT: N. A. Perfilov, N. S. Ivanova et al. (ZhETF, 38, 345 (1960)) gave
an estimate (3 millibarn) for the formation cross-section of Li^8 and B^8 .
The author improves this estimate by investigating the formation of Li^8 in
a HNKFI-R (NIKFI-R) emulsion by 9-Bev protons. His value obtained is
 2.4 ± 0.6 millibarn. A further result is that the formation cross-section
of Li^8 is practically constant over the energy range from 1 Bev to 9 Bev.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint
Institute of Nuclear Research)

PRESENTED: October 26, 1962, by N. N. Bogolyubov, Academician

Card 1/2

Cross-section for the formation of Li^8 ... S/020/63/148/005/009/029
B112/B186

SUBMITTED: September 22, 1962

Card 2/2

TERPIGOROV, A.M., akademik, otvetstvennyy redakter; GRIGOR'YEV, Ye.N.,
redaktor izdatel'stva; PAVLOVSKIY, A.A., tekhnicheskiy redakter.

[Terminology of electrovacuum apparatus] Terminologiya elektrovakuumnykh
priborov. Moskva, 1956. 47 p. (Sborniki rekomenduemykh terminov, no.39)
(MIRA 9:6)

1. Akademiya nauk SSSR. Komitet tekhnicheskoy terminologii.
(Vacuum apparatus--Terminology)(Electric discharges through gases--
Terminology)

WAVE 7 BOOK EXPLORATION 307/3781

Aradaniya nauk SSSR. Institut atomotitri i telemekhaniki
Promyshlennaya telemekhanika (Industrial Telemekhanika) Moscow, 1960.
December 24 2,000 copies printed.

204 P. Errata slip inserted.

Resp. Ed.: N.A. Gavrilov; Ed. of Publishing House: Ye.M. Grigor'yev;
Tech. Ed.: N.O. Shavchenko.

NOTE: This collection of articles is intended for scientific
telemechanics.

COVERAGE: The book contains studies completed in 1937 by the workers of the Institute of Automatics and Telemechanics, Academy of Sciences (Institute of Automatics and Telemechanics equipment, scientific equipment, etc.). They include systems for distributed automatic control, the telemechanics signal systems, problems of bridge relays, the problems of relaying in relay circuitry, and methods of synthesizing relays in relay circuitry using contactless components. As personalities are mentioned. Most of the articles are accompanied by references.

TABLE 1. GENERAL PROBLEMS OF TELEMECHANICS

Carillov, M.A. Development and Present State of Elastic Theory and Mechanics of Solids and Structures

PART II. THEORY OF POLYCLINIC SYSTEMS

... is a system of bridge circuitry.

92
Rodia, V.M. Contactless Counter Circuits Combining Counting and
Calm (Calm Functions)

Ottawa, V.N. Evaluation of the Number of Self-Correcting Codes
with Generalization of Characteristic Pulse Vectors 109

Tomel'd, Yu.L. Combined Use of Characteristic Pulse Features
in Protected Circular Signals

Charles W. Y.M. Signal Systems Using Characteristic Pulse Pro-
cessing Features

Zhoshnkrashvili, V.A., and K.O. Mutsakhin. Design of Full-
Wave Pulse Distributor Using Waveguide Components

Franklinville, IN: Operation of Pulse Components Using Ferro-magnetic Materials With Rectangular Hysteresis Loop Under Resistive and Inductive Load Conditions 154

Parthomometa, P.P. High-Capacity Machine for Malay Circuitry
1947-1948

PART III. THERMAL EXPANSION

Billik, R.Y.J. and Y.M. Silayan. Complex Telemechanics System for Distributed Equipment

Radtsheva, Ye. V. Telemechanic Equipment for the Control of Distributed Equipment Systems

Franglishvili, I.V. New Components for Contactless Telemechanic Systems 236

Willk, R.V. Remote Signal System Using Polarized Rays 260

Abdullayev, D.A. Remote Signaling in Telecontrol Systems
With Distributed Control Points 277

AVAILABLE: LIBRARY OF CONGRESS (TJ Z13.A325)

2/15/83

09-08-1
at/maai/ma

GOKHEBERG, B.M., doktor fiziko-matem. nauk, prof., otv. red.;
GRIGOR'YEV, Ye.N., red.

[Charged particle accelerators. Fundamental concepts.
Terminology] Uskoriteli zariazhennykh chastits. Osnov-
nye poniatia. Terminologiya. Moskva, Izd-vo AN SSSR,
1963. 23 p. (Sbornik rekomenduemykh terminov, no.65)
(MIRA 17:1)

1. Akademiya nauk SSSR. Komitet nauchno-tehnicheskoy
terminologii.

ANDREYEV, Oleg Vladimirovich; BOLDAKOV, Yevgeniy Vasil'yevich;
GAYDUK, Kirill Vasil'yevich; KOSHELEV, Vyacheslav
Aleksandrovich; RODIN, Arkadiy Ivanovich; ROYER,
Yevgeniy Nikolayevich [deceased]; ~~GRIGOR'YEV, Ye.N.,~~
inzh., retsenzent; TRESKINSKIY, S.A., känd. gebl.-~~akadem.~~
nauk, retsenzent; GLINKA, N.N., red.; KOVRIZHNYKH, L.P.,
red.isd-va; BODANOVA, A.P., tekhn. red.

[Concise manual on conduits and small bridges] ~~Praktiki spravochnik~~
po trubam i malym mostam. [By] O.V.Andreev i dr. Izd.3.,
perer. Moskva, Avtotransizdat, 1963. 179 p. (MIRA 17:2)

AGREST, Matest Mendeleyevich; MAKSEOV, Mikhail Zakharovich;
GRIGOR'YEV, Ye.N., red.

[Theory of incomplete cylindrical functions and their
applications] Teoriya nepolnykh tsilindricheskikh funktsii
i ikh prilozheniya. Moskva, Atomizdat, 1965. 350 p.
(MIRA 18:8)

GUBAREV, Vladimir Stepanovich; GRIGOR'YEV, Ye.N., red.

[Birth of the atomic reactor; meetings in the city
of physicists] Rozhdenie atomnogo reaktora; vstrechi
v gorede fizikov. Moskva, Atomizdat, 1965. 95 p.
(MIRA 18:12)

KOLEN'KO, Yekaterina Igant'yevna, dotsent; GRIGOR'YEV, Ye.P., redaktor;
GUREVICH, M.M., tekhnicheskiy redaktor

[Practical guide to veterinary microbiology] Rukovodstvo k prakticheskim sanitatsiam po veterinarnoi mikrobiologii. Moskva, Gos. izd-vo selkhoz. lit-ry, 1956. 223 p. (MLRA 9:11)
(Microbiology)

GRIGOR'YEV, V. I.

GLAGOLEV, Pavel Alekseyevich; IPPOLITOVA, Valentina Ivanovna; GRIGOR'YEV,
Ye. P., redaktor; USTIMENKO, L. F., redaktor; SOKOLOVA, N. N.,
tekhnicheskii redaktor

[Anatomy of farm animals with principles of histology and embryology]
Anatomia sel'skokhoziaistvennykh zhivotnykh s osnovami gistologii i
embriologii. Moskva, Gos. izd-vo sel'khoz. lit-ry, 1956. 472 p.
(Veterinary anatomy) (MLA 10:3)

35-25771, K 7
BLOMKVIST, M.S.,redaktor; VSYAKIKH, A.S.,professor, redaktor;
YESSAULOV, P.A.,kandidat sel'skokhozyaystvennykh nauk, redaktor;
GRIGOR'YEV, Ye. P.,redaktor; PRVZNER, V.I.,tekhnicheskiy redaktor;
PHERSYPKINA, Z.D.,tekhnicheskiy redaktor

[Principles of stockbreeding] Osnovy zhiivotnovodstva. Izd. 4-oe.
Moskva, Gos. izd-vo sel'khoz. lit-ry, 1957. 390 p. (MLA 10:4)
(Stock and stockbreeding)

POPOV, Ivan Semenovich; GOSTIMENKO, L., redaktor; GRIGOR'YEV, Ye., redaktor;
PAVLOVA, M., tekhnicheskiiy redaktor

[The feeding of farm animals] Kornlenie sel'skokhoziaistvennykh
zhivotnykh. Izd. 9-oe, perer. Moskva, Gos.izd-vo sel'khoz. lit-
ry, 1957. 471 p. (MIRA 10:10)

(Feeding and feeding stuffs)

RED'KIN, Andrey Petrovich, pochetnyy akademik; GRIGOR'YEV, Ye.P., red.;
GUREVICH, M.M., tekhn, red.

[Swine breeding] Svinovodstvo. Moskva, Gos.izd-vo sel'khoz.
lit-ry, 1958. 407 p. (MIRA 13:4)

1. Vsesoyuznaya akademiya sel'skokhozyaystvennykh nauk imeni V.I.
Lenina (for Red'kin).
(Swine)

PANKRATOV, Aleksandr Yakovlevich, prof., doktor vet.nauk; GRIGOR'YEV,
Ye.P., red.; SHIRKOVA, Ye.A., tekhn.red.

[Microbiology] Mikrobiologiya. Moskva, Gos. izd-vo sel'khoz.
lit-ry, 1958. 317 p. (MIRA 12:1)
(Microbiology)

KOLESNIKOV, Aleksey Samoylovich, Geroy Sotsialisticheskogo truda;
GRIGOR'YEV, Ye.P., red.; TRUKHINA, O.N., tekhn. red.

[Full utilization of water resources; experience of the
Kanevskaya poultry breeders] Osvaivaem golubuiu tselinu;
opyt kanovskikh ptitsevodov. Moskva, Gos. izd-vo sel'khoz.
lit-ry, 1960. 61 p. (MIRA 15:1)

1. Sekretar' Kanevskogo rayonnogo komiteta Kommunisticheskoy
partii Sovetskogo Soyuza Krasnodarskogo kraya (for Kolesnikov).
(Kanevskaya District—Poultry)

SUKHOVERKHOV, P.M., kand.biolog.nauk; DENISOV, L.I., inzh.; MATSUTSIN,
N.G., inzh.; PISARENKOVA, A.S., rybovod; SHCHERBINA, A.K., doktor
veterinarnykh nauk; GRIGOR'YEV, Ye.P., red.; DEYEVA, V.M., tekhn.red.

[Fish culturist's handbook] Spravochnik rybovoda. Moskva, Gos.
izd-vo sel'khoz.lit-ry, 1960. 350 p. (MIRA 13:9)
(Fish culture)

POPOV, Aleksandr Mikhaylovich; GRIGOR'YEV, Ye.P., red.; PEVZNER,
V.I., tekhn. red.

[Large-scale fattening of swine] Massovyi otkorm svinei. Mo-
skva, Sel'khozizdat, 1961. 45 p. (MIRA 15:10)

1. Svinar'-mekhanizator sovkhoza "Borovichanin" Novgorod-
skoy oblasti (for Popov).

(Swine---Feeding and feeds)

BURLAKOV, N.M., otv. red.; STARTSEV, D.I., professor, otv. red.; GRIGOR'YEV,
Ye.P., red.; DEYEVA, V.M., tekhn. red.

[Stockbreeding; cattle] Skotovodstvo; krupnyi rogiyi skot. V dvukh
tomakh. Moskva, Gos.izd-vo sel'khoz. lit-ry. Vol.2. 1961. 315 p.
(MIRA 14:7)

1. Chlen-korrespondent Vsesoyuznoy akademii sel'skokhozyaystvennykh
nauk im. V I.Lenina (for Burlakov)
(Cattle)

ZHIGUNOV, P.S., red.; GRIGOR'YEV, Ye.P., red.; DEYEVA, V.M., tekhn.
red.

[Northern reindeer breeding] Severnoe olenevodstvo. Izd.2.,
perer. Moskva, Izd-vo sel'khoz. lit-ry, zhurnalov i plakatov,
1961. 518 p. (MIRA 15:1)
(Reindeer)

DANILENKO, I.A.; DOGDANOV, G.A., kand. sel'khoz. nauk; GRIGOR'YEV, Ye.P.,
red.; YELIZAVETSKIY, V.S., tekhn. red.

[Corn and sugar beets in swine feeding] Kukuruz a i sakharnaia
svekla v kormlenii svinei. Moskva, Sel'khozizdat, 1962. 229 p.
(MIRA 15:6)

1. Chlen-korrespondent Vsesoyuznoy akademii sel'skokhozyaystven-
nykh nauk im. V.I.Lenina (for Danilenko).
(Swine--Feeding) (Corn as feed) (Sugar beets as feed)

ACC NR: AP7012407

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AUTHOR: Avotina, M. P.; Grigor'yev, Ye. P. -- Grigoriev, E. P.

ORG: Leningrad State University (Leningradskiy gosudarstvennyy universitet)

TITLE: Decay of Ho¹⁵⁵

SOURCE: Yadernaya fizika, v. 5, no. 1, 1967, 16-17

TOPIC TAGS: holmium, half life, spectral line, radiation spectrometer, dysprosium

SUB CODE: 20,11

ABSTRACT: A number of the inner conversion electron spectral lines of Ho¹⁵⁵ is measured with the double-focusing β -spectrometer. The half-life of the Ho¹⁵⁵ nucleus ($T_{1/2} = 48 \pm 2$ min) is determined from the decrease of the conversion lines intensity. Some transitions are established to belong to the Ho¹⁵⁵-decay and not to that of the isotope Ho¹⁵⁶ with the near half-life $T_{1/2} = 56 \pm 2$ min. The absolute intensity of the conversion lines is determined by means of comparison with the intensity of the line K227 from the daughter isotope Dy¹⁵⁵. Orig. art. has: 2 tables. [Based on authors' Eng. Abst.]

[JPRS: 40,391]

Card 1/1.

0932 1338

MESHCHERYAKOV, M., ~~RENT~~^u, A., GRIGOR'YEV, Ye., and KURENINA, T.

Mbr., Radium Institute, Acad. Sci., -1946-.

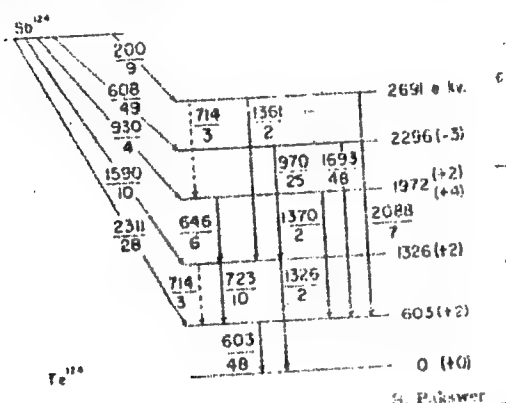
"On the Instability of Ne^5 ," Dok. AN, 52, No. 9, 1946

GRIGOR'YEV, Ye. P.

10
31-PM

Handwritten: 12

Decay of antimony-124. A. V. Zolotarev, Ye. P. Grigor'ev, and M. A. Alroyan (A. A. Zhdanov State Univ., Leningrad). Exptl. Acad. Nauk S.S.S.R., Ser. Fiz. 20, 289-307 (1956).--The following components were found in the β -spectrum: 202 ± 15 , 638 ± 10 , 650 ± 15 , 1590 ± 10 , and 2311 ± 6 e.v. The 1st 4 components have Fermi form, the last is a mixt. of interaction ($S + T$, $\Delta J = 1$). The conversion spectrum has 10 lines and contains a group of Auger electrons (K series). The γ -ray spectrum was detd. photoelectrically with photoelectrons liberated from Th (3 mg./sq. cm.), Pb (18 mg./sq. cm.), or Pt targets. Twelve γ -lines are tabulated. From all results the following decay scheme of ^{124}Sb to ^{124}Te was developed and discussed:



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Grigoriev, E. P.

17
The multipolarity of Indium-111 radiation. E. P. Grigoriev, L. N. Petukhov, and A. V. Zolotarev. *Vysokoe Energ. Fiz. i Khim.* No. 1, 1957, Leningrad. Univ. 12, No. 4, Ser. Fiz. i Khim. No. 1, 1957. (1957).—The transition from the 1st excited state of Indium-111 with $E = 393$ -e. kv. radiation and 1.74-hr. half-life has been studied. The intensity ratios of K , L , and M conversion lines in In^{111} were investigated by employing a β -spectrometer with double focus of the beam. The K/L ratio was detd. to be 5.15 ± 0.14 , by the use of a single-particle model, which permits one to refer this transition to the $M4$ type. By employing a generalized nucleus model, the possible amt. of $E5$ radiation was found to be within 30%.

Alfred Kacmhar

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Grigor'yev, Ye. P.

USSR/Physical Chemistry. Some Questions Concerning Subatomic Structure of Matter. B-2

Abstr Jour: Referat. Zhurnal Khimii, No 2, 1958, 3477.

Author : Ye. P. Grigor'yev, L.V. Gastova, A.V. Zolotavin, B. Kratsik, T.V. Poleshchuk, O.V. Chubinskiy.

Inst : Leningrad University.
Title : On As⁷⁶ Emission.

Orig Pub: Vestn. Leningr. un-ta, 1957, No 10, 37-39

Abstract: β and γ -emissions of As⁷⁶ with $T_{1/2} = 26.75$ hours are studied. The β -spectrum was studied with a β -spectrometer with double focussing. The γ -emission of As⁷⁶ was measured with a magnetic spectrometer for measuring the hard γ -emission by recoil electrons. 5 β -lines and 6 γ -lines were revealed, their E is as follows: 350 ± 30 , 880 ± 100 , 1760 ± 40 , 2410 ± 30 , 2960 ± 20 keV and 1.21 ± 0.02 , 1.43 ± 0.03 , 1.77 ± 0.04 , 2.10 ± 0.03 , 2.42 ± 0.04 MeV correspondingly.

Cardi : 1/1

-1-

GRIGOR'YEV, Ye.P.; YEVTIKHIN, L.M.; ZOLOTAVIN, A.V.

Multipolarity of the radiation of In^{113} [with summary in English,
p.152]. Vest. Len. un. 12 no.4:57-62 '57. (MLSA 10:4)
(Indium--Isotopes)

GRIGOR'YEV, Ye.P.; GUSTOVA, L.V.; ZOLOTAVIN, A.V.; KRATSIK, B.;
POLESCHCHIK, T.V.; CHUBINSKIY, O.V.

On the radiation of As^{76} . Vest.LGU 12 no.10:37-39 '57.
(MLRA 10:8)

(Arsenic--Isotopes)

GRIGOR' YE. V. YE. P.

20-1-13/42

AUTHORS:

Grigor'iev, Ye. P., Dzhelepov, B. S., Corresponding
Member of the AN SSSR, Zolotavin, A. V., Kratsik, B.,
Preobrazhenskiy, B. K., Yanchevskaya, I. S.;

TITLE:

The Conversion Spectrum of Ho¹⁶⁰ (Konversionnyy spektr Ho¹⁶⁰).

PERIODICAL:

Doklady AN SSSR, 1957, Vol. 117, Nr 1, pp. 53 - 56 (USSR)

ABSTRACT:

The present paper investigates the conversion spectrum occurring in the radioactive transformation Er¹⁶⁰ Ho¹⁶⁰ Dy¹⁶⁰. The spectrum was investigated by means of a spectrometer with a double focusing. The conversion spectrum is homogeneous in both fractions: Er¹⁶⁰ does not produce any conversion electrons and all the electrons belong to the Ho¹⁶⁰. The results of the investigations of the conversion spectrum are given in a table. The intensity of all the lines observed decreased in a period corresponding to the half-value period of the investigated fractions: 29 hours in the case of the erbium fraction and 5 hours of the holmium fraction. On measuring faults something is said, too. The general form of the conversion spectrum agrees with an earlier discovered form (reference 2). Moreover, some new facts could be explained, which permit the determination of the decay scheme of the Ho¹⁶⁰; The lines L_I+L_{II}, L_{III}, M and N of the transition taking place in the Ho¹⁶⁰ were observed with 60 KeV. The decomposition into the components makes it possible to determine the relative intensity of the lines. The relationship L_I:L_{II}:L_{III} =

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The Conversion Spectrum of Ho^{160} .

20-1-13/42

= 0,2:1, 1:1,0 determined by the authors for the transition 86,4 keV confirms the multipole property E_2 of which. The line $E_e = 99,3$ keV discussed in a preparatory paper (reference 2) was identified as the L-line of the transition 107 keV by the authors. Moreover the K-conversion line of this transition was found. The conversion line of the transition 298 keV on the K-shell is a narrow doublet with $\Delta E \sim 1$ keV. Further particulars on these new discovered lines are given. The data given here and the data on the decay of the Tb^{160} (references 7,8,9,10,11,12) can be used as fundament for the construction of the decay scheme of Tb^{160} and Ho^{160} . Such a scheme is illustrated by a graph. There are 3 figures, 2 tables, and 12 references, 5 of which are Slavic.

ASSOCIATION: Physics Institute of the Leningrad State University im. A.A. Zhdanov
(Fizicheskiy institut Leningradskogo gosudarstvennogo universiteta im. A. A. Zhdanova).

SUBMITTED: September 13, 1957

AVAILABLE: Library of Congress

Card 2/2

GRIGOR'YEV Ye P.

AUTHORS: Grigor'yev, Ye. P., Dzhelepov, B. S. 48-22 2 2/17
Zolotavin, A. V., Kraft, O. Ye., Kratsik, B. I., Peker, L. K.

TITLE: The Decay of Tb^{160} and H^{160} and the Level Scheme of Dy^{160}
(Raspad Tb^{160} i Ho^{160} i skhema urovney Dy^{160})

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, 1958
Vol. 22, Nr 2, pp. 101-125 (USSR)

ABSTRACT: Radioactive Tb^{160} was here obtained by irradiation with slow neutrons of chemically pure (99.99%) Tb_2O_3 . The position and relative intensity of 19 lines was carefully measured in the conversion spectrum. The decomposition of the known line 963 + 966 keV into two components is essentially new. The relative intensities of the γ -transitions were obtained by means of a division of the line areas through the corresponding photoelectric absorption factor. The values were because of the absorption of the γ -rays corrected in the source itself and at the walls of the cylinder, as well as because of the absorption of the photoelectrons in the target and in the slits of the counter. The obtained relative intensities

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The Decay of Tb^{160} and H^{160} and the Level Scheme of Dy^{160} 49 22-2 2/ 7

of the γ -lines in the spectrum of photoelectrons are in the range of $\pm 20\%$ in agreement with those of references 5 and 6. The measurements of the conversion spectrum show that the soft component is twice as weak as the hard one. The multiplicity of these transitions apparently is equal and between the intensities of the γ -lines the same relation

must exist. - Radioactive Ho^{160} was obtained by irradiation of a tantalum target with protons with an energy of up to 660 MeV. The erbium and holmium fractions were chromatographically separated from the target. In the conversion spectrum all conversion lines of Ho^{160} that had been obtained in reference 8 were also confirmed here and many new ones discovered. It is shown that the transitions to the upper levels are permitted ones. The small number of positrons (one positron) per decay is explained by the fact that at the low decay-energy the K-capture is dominating. When the decay to two upper levels is considered permitted K/β^+ can be determined according to the tables by Zweifel (ref. 10). The values 5400 and 400 thus obtained are very high, consequently a considerable part of all conversions

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of Ho^{160} must take place by way of K-capture. In the

The Decay of Tb^{160} and H^{160} and the Level Scheme of Dy^{160} 48-22-2-2/17

second short chapter the determination of the multiplicity of transitions is shown and its results are given in the form of a table. - In the third chapter the scheme of the Dy^{160} -levels is treated. A level scheme of Dy^{160} was here compiled with the use of all experimental data, theoretical considerations and the analogy with the neighboring nuclei. This scheme in the best manner corresponds to all data. All arguments confirming this scheme are given here and all facts contradicting this scheme or facts which cannot be explained are enumerated. There are 8 figures, 12 tables, and 19 references, 8 of which are Soviet.

ASSOCIATION: Fizicheskii institut Leningradskogo gosudarstvennogo universiteta im. A. A. Zhdanova (Institute for Physics in the Leningrad State University imeni A. A. Zhdanova)

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Card 3/3 1. Terbium-Decay 2. Terbium isotopes (Radioactive)

GRIGOR'YEV, Ye. P.

48-22-2-12/17

AUTHORS:

Grigor'yev, Ye. P., Zolotavin, A. V., Kuz'min, I. I.,
Pavlitskaya, Ye. D.

TITLE:

On the Decay of Rh^{106} (O raspade Rh^{106})

PERIODICAL:

Investiya Akademii Nauk SSSR, Seriya Fizicheskaya, 1958,
Vol. 22, Nr 2, pp. 194 - 197 (USSR)

ABSTRACT:

This is a lecture held at the VII All Union Consultative Conference on Nuclear Spectroscopy, which was devoted to the investigation of the radiation accompanying the radioactive transmutation of $Ru^{106} \rightarrow Rh^{106} \rightarrow Pd^{106}$ with the help of a β -spectrometer with double focusing. (Ref 1). In this apparatus the diaphragms near to the source were removed and the thickness of the others increased to from 8 - 9 mm. The inside of the apparatus, at the rim of the diaphragms nearest to the source, was coated with beryllium plates. The conversion lines, the complete β -spectrum and the spectrum of photo electrons were investigated.

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1) In the investigation of the continuous β -spectrum of Rh^{106} results were obtained, which do not correspond to the data

On the Decay of Rh¹⁰⁶

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by Alburger (Ref 2) with respect to the composition of this spectrum (intensity components). Therefore control experiments were performed with the β -spectra of P³², As⁷⁶ and K⁴², which lead to the conclusion that the spectrometer accurately reproduces the form of the β -spectra up to 3 MeV, above this value, however, a distortion of the shape is possible. 2) The observation of internal conversion proved to be difficult, and it was only possible to measure the K and L conversion lines of the transition with an energy of 513 and 623 keV. In this case the data by Alburger correspond to the here obtained results, with the exception of the line L-623, which alone was treated in this paper. 3) The γ -spectrum of Rh¹⁰⁶ was in this investigation examined according to the photo electron spectrum with a cylindrically symmetric source. This investigation was pushed in two directions: a) The photo electrons of the γ -transitions with 513, 623 and 1052 keV were measured, and their respective intensity was determined. Pb, Bi and Th served as target here. b) The range from 100 - 400 keV was investigated under the assumption that according to the decay scheme, the transition with the energies 150, 220, 240, 345 and 390 keV should be determined. The experiment proved to be difficult. No photo peaks could be found in this range

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On the Decay of Rh^{106}

and the upper intensity limit of the possible γ -transitions was assumed to be $5 \cdot 10^{-3}$ of the intensity of γ -quanta with the energy of 513 keV. 4) The authors established discrepancies in the decay scheme by Alburger (between the intensity components of the β -spectrum and the relative intensities of the γ -transitions) that is to say for the type E 2. According to the here obtained results the coefficient of the intensity components of the transition conversion at 623 keV amounts to $(3,5 \pm 1) \cdot 10^{-3}$, which value also corresponds to the computation of E 2 ($2,05 \cdot 10^{-3}$) (Ref 3). There are 1 figure, 1 table, and 11 references, 5 of which are Soviet.

ASSOCIATION: Fizicheskii institut Leningradskogo gos. universiteta im. A. A. Zhdanova
(Physics Institute, Leningrad State University ineni A. A. Zhdanov)

AVAILABLE: Library of Congress

Card 3/3 1. Ruthenium-Decay-Analysis

SGN/48-22-7-12, 26

AUTHORS: Grigor'yev, Ye. P., Dzhelepov, B. S., Zolotavin, A. V.

TITLE: Relative Intensities of γ -Transitions of Ho^{160}
(Otnositel'nyye intensivnosti γ -perekhodov Ho^{160})

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya fizicheskaya, 1959,
Vol. 22, Nr 7, pp. 821-823 (USSR)

ABSTRACT: Reference is made to previous papers (Refs 1, 2). A knowledge of the accurate thickness of the bismuth target permitted to determine the ratio between the intensities of the lines $h\nu = 196$ keV and of harder lines. In these measurements one and the same source was used. The energies and the intensities of the 6 strongest γ -transitions were determined. On the basis of the relative intensities of the γ -radiation and the results from the examination of the conversion spectrum of Ho^{160} it is possible to determine the factors of transition-conversion and their multipole order. This can be done if it is taken into consideration that the 196 keV transition takes place between the levels of the first rotation-band of Dy^{160} 4^+ and 2^+ . It is assumed that the conversion factor of this

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Relative Intensities of γ -Transitions of Ho^{160}

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transition is equal to the theoretical one for the electric quadrupole radiation. In this manner the conversion factors for the other transitions are obtained. The results completely substantiate the assumption made by the authors concerning the level scheme of Dy^{160} from reference 2. The positive parity of the 1695 keV level is now proved and a spin-value of 4 is very probable. The 729 keV transition in this case is E2, whereas the 646- and 538 keV transitions are a mixture of E2 and M1 or of E2. The hard component of the doublet 963-966 keV is a pure E2 transition. Hence the multipole order of the 963 keV transition is M1 or E2 + M1. The 873- and 879 keV transitions most probably have a multipole order of E2 + M1. According to measurements of the spectrum of the photoelectrons the correctness of the computed intensities of the transitions of 538, 646, 873 + 879 and 963 keV is proved. Fluctuations within the limits of 50-40% were found in the intensity of the 730keV transition. The staff of the OIYaI and of the Radium Institute assisted in the irradiation of the tantalum target and in the preparation of pure erbium- and holmium-preparations. There are 2 figures, 2 tables, and 4 references, 4 of which are Soviet.

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SOV/48-22-7-15/26

AUTHORS: Grigor'ev, Ye. P., Dzhelepov, B. S., Zolotavin, A. V.,
 Mishin, V. Ya., Prikhodtseva, V. P., Khol'nov, Yu. V.,
 Shchukin, G. Ye.

TITLE: Radiation From As^{74} (Izlucheniye As^{74})

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya fizicheskaya, 1958,
 Vol. 22, Nr 7, pp. 831-838 (USSR)

ABSTRACT: In December 1957 the authors obtained a radiochemically pure preparation of As^{74} (~4 mCu) with a good specific activity. The characteristic features of this decay were examined and precisely determined. First the production of the preparation is described. This As^{74} was produced by a bombardment of germanium with deuterons with an energy of 10,8 MeV. The results of the investigation of β^- and β^+ -spectra are exposed. It is proved that the ground state of As^{74} is of an 2^+ -type. After the "bypass" β^- and β^+ spectra had been subtracted the Curie diagrams for the soft components of both spectra proved to be rectilinear. In the back-ground of the β^- -spectrum the K- and (L+M) conversion-lines of the transitions of 596 and 635 keV are clearly marked. The K-635 line is, without doubt.

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Radiation From As⁷⁴

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a transition of the type $2^+ \longrightarrow 0^+$. With the $h\nu = 596$ keV transition, which is connected with the positron branch, conditions are more complicated, as the proportion of the K-capture must be known in order to be able to determine α_K . Two methods of the determination of α_K are given. The spectrum of the γ -radiation of As⁷⁴ was investigated by means of the recoil electrons. The relative intensity of three γ -lines was investigated with an equipment of a better resolution. The annihilation line, at $h\nu = 586$ and the 635 keV line. With the help of an equipment of a lower resolution, but of a luminous intensity amplified by the hundredfold, it was attempted to find harder γ -lines in the radiation of As⁷⁴. The decay energy in the transmutation from As⁷⁴ \longrightarrow Ge⁷⁴ gives rise to the assumption that the levels of Ge⁷⁴ are excited up to those of 2500 keV. Actually in the spectral range of 1200 keV a pronounced super-elevation of the counting rate above the quiet background connected with the softer lines was observed. The intensity of this line is smaller by a factor of 220 than that of the annihilation line. It is shown that in Ge⁷⁴ the second level of excitation probably has an energy of 1200 keV. If this is true, it should be expected that a transition from the second level to the first one of

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Radiation From As⁷⁴

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about 600 keV exists and that this level forms a doublet with the 596 keV line. The ramifications in the decay scheme of As⁷⁴ are investigated. In the last chapter some remarks concerning the individual levels are given. As regards the conversion of the transition at $\Delta E = 596,3$ keV of Ge⁷⁴ it is shown that in this transition the ratio is $K/L = 9,6 \pm 2,1$. In the investigation of the ratio K/β^+ in the As⁷⁴ decay to the level at 596,3 keV of Ge⁷⁴ it is shown that the ratio K/β^+ for this transition is normal. The level at 1200 keV of Ge⁷⁴ is probably a second vibration level with the characteristic 2^+ . The second excited level of Se⁷⁴ is probably near 1300 keV and is of the type 2^+ .

B. M. Isayev, I. P. Selinov, Ye. Ye. Baroni, Ye. N. Khoprov and their team collaborated in the work. There are 5 figures, 3 tables, and 15 references, 8 of which are Soviet.

Card 3/4

AUTHORS: Grigor'yev, Ye. P., Dzhelepov, B. S., SOV/49-22-8-4/20
Zolotavin, A. V., Mishin, V. Ya.

TITLE: Conversion Electron Spectrum of As⁷³ (Spektr konversionnykh elektronov As⁷³)

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya fizicheskaya, 1958, Vol. 22, Nr 8, pp. 927 - 930 (USSR)

ABSTRACT: The basic features of the decay scheme of As⁷³ are already known. The scheme suggested in reference 1 and precised in the references 2-4 is given in figure 1. The authors used a β -spectrometer with a resolving power of 0.4% (Ref 5). The As⁷³ source was obtained by a bombardment of natural germanium with deuterons with an energy of 10.8 MeV. The source contained As⁷³ and residual quantities of As⁷⁴. The production method is described in reference 6. The information obtained permits to precise the transition type $h\nu = 52.8$ keV. At present no accurate conversion coefficients on the L-shell are available for low energies and for different values of Z. The ratio K_2/L_2 was compared with the coefficients computed by L.A.Sliv and I.M.Band which were obtained by an extrapolation of the coefficients (Table 2). It can be seen that a combined

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Conversion Electron Spectrum of As⁷³

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utilisation of the quantities K/L and α_K permits to exclude all types except M2. The authors investigated the possibilities offered in the selection of the characteristics of the second level of Ge⁷³. The initial data are obtained from the decay of As⁷³. The ground state of this nucleus is probably $P_{3/2}$. This value is predicted in the scheme by Mayer which is substantiated with a number of nuclei with odd A and 31 or 33 protons or neutrons. A comparison of the decay energy and of the life of As⁷³ permits to determine $lg\tau_f$ for an electron capture: $lg\tau_f = 5.5$. This value is typical for allowed transitions. Hence it follows that the level at 66 keV Ge⁷³ is of the type $P_{1/2}$, $P_{3/2}$ or $f_{3/2}$. In table 3 the upper limit of the ratios of the K-conversion lines of the transitions 66,3 and 52,8 keV is given. This ratio was computed according to Weisskopf (Vayskopf) under the assumption, that the multipole order of the transition 66,3 keV is E3 and M1. This is given as a comparison. The ratios $L(M + N)$ for the transition 52,8 keV are of interest. The existence of 2 isotopes As⁷³ and As⁷⁴ in the preparation investigated by the authors permitted to compare their relative

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